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**for**  
**SIMS,JOHN 2468733 Tuesday, November 25, 2003 09:45:04 Central**

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**H**

United States District Court,  
E.D. California.  
INTEL CORPORATION, Plaintiff,  
v.  
ALTIMA COMMUNICATIONS INC., Defendant.  
No. CV S-99-2488 GEB/GGH.  
May 20, 2003.

Patent holder brought infringement action against competitor over patent on repeater management technology. In *Markman* proceeding, the District Court, Burrell, J., held that: (1) claim **preamble** was essential to understand limitations or terms in claim body, limiting scope of claim; (2) presumption that "repeater management means" element was written in means plus function form was not rebutted; (3) use of words "means for" triggered presumption that "bridging support means" element was written in means plus function format; (4) media access controller (MAC) managed access to repeater data interface using media access management algorithms set forth in particular Institute for Electrical and Electronic Engineers (IEEE) standard; (5) repeater management means controlled bridging support means; (6) repeater management means included at least two registers for storing attributes relating to repeater functions;

**\* The requested pages begin below \***

[2]

291 Patents  
291IX Construction and Operation of Letters Patent  
291IX(B) Limitation of Claims  
291k165 Operation and Effect of Claims in General  
291k165(4) k. Reading Limitations or Elements Into Claims, or Most Cited Cases Disregarding Limitations or Elements.

Claim **preamble** was essential to understand limitations or terms in claim body, limiting scope of claim, where, in conjunction with term "comprising," words in patent's **preamble**, "repeater management device," recited essential structure by requiring inclusion of repeater management, bridging support, and media access controller functions in single device.

[3]

291 Patents  
291IX Construction and Operation of Letters Patent  
291IX(B) Limitation of Claims  
291k165 Operation and Effect of Claims in General  
291k165(4) k. Reading Limitations or Elements Into Claims, or Most Cited Cases Disregarding Limitations or Elements.

Whether to treat a **preamble** as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent.

[4]

291 Patents  
291IX Construction and Operation of Letters Patent  
291IX(B) Limitation of Claims  
291k165 Operation and Effect of Claims in General  
291k165(4) k. Reading Limitations or Elements Into Claims, or Most Cited Cases Disregarding Limitations or Elements.

In the patent context, a **preamble** is not limiting where a patentee defines a structurally complete invention in the claim body and uses the **preamble** only to state a purpose or intended use for the invention.

[5]

291 Patents  
291IX Construction and Operation of Letters Patent  
291IX(B) Limitation of Claims  
291k165 Operation and Effect of Claims in General  
291k165(4) k. Reading Limitations or Elements Into Claims, or Most Cited Cases Disregarding Limitations or Elements.

In general, a **preamble** limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim.

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**\* The requested pages begin below \***

291 Patents  
291II Patentability  
291II(D) Anticipation  
291k67 Prior Description in Printed  
Publication  
291k69 k. Sufficiency of Description.  
Most Cited Cases

Incorporation by reference provides a **method** for integrating material from various documents into a host document, a patent, or printed publication in an anticipation determination, by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein; to incorporate material by reference, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents, and, further, the standard of one reasonably skilled in the art should be used to determine whether the host document describes the material to be incorporated by reference with sufficient particularity.

**\* The requested pages begin below \***

[18]

291 Patents  
291IV Applications and Proceedings Thereon  
291k101 Claims  
291k101(2) k. Construction in General.  
Most Cited Cases

Media access controller (MAC) was required to generate and detect error correcting codes, including means for generating **preambles**, handling deferrals and collisions, controlling and handling backoff conditions, and retrying data transmission, in context of patent claim on repeater management technology. 35 U.S.C.A. § 112.

**\* The requested pages begin below \***

would assist the judge in understanding the technology of the invention." (Order filed February 24, 2003, citing *Markman v.*

*Westview Instruments, Inc.*, 52 F.3d 967, 986 (Fed.Cir.1995).

### Background and Procedural History

Level One Communications, Inc. ("Level One") filed suit against Altima Communications, Inc. ("Altima") for patent infringement of the '603 patent on December 17, 1999. On May 8, 2000, Altima's motion under 28 U.S.C. § 1659 was granted which stayed the action because of a proceeding before the United States International Trade Commission ("ITC"). The stay was dissolved on February 12, 2002. On November 27, 2002, a motion was granted substituting Intel Corporation ("Intel") as plaintiff in place of Level One.

### Technology Background

The invention in the '603 patent "relates in general to [a] repeater management device, and in particular, to a **method** and apparatus for integrating repeater management, media access control, and bridging support functions into a single device." ('603 patent at col. 1:9-12.) The technology field involves data communications and resource sharing among computers within a network.

Computers may be connected to each other in various ways, one of which is Ethernet. Ethernet allows computers to communicate with each other through

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and

media access controller, coupled to the repeater management means, for providing signal framing of the data packets and for controlling access to a repeater data interface.

*A. Preamble: "A repeater management device for communication networks, the repeater management device controlling repeaters and routing data packets between a receiving port and a destination port, comprising;"*

[3] The parties agree that the **preamble** of Claim 1 should be construed as a claim limitation because it is essential to understand the invention and the claimed elements. "No litmus test defines when a **preamble** limits the claim scope." *Catalina Mktg.*

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*Int'l Inc. v. Coolsavings.com Inc.*, 289 F.3d 801, 808 (Fed.Cir.2002). "Whether to treat a **preamble** as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent." *Storage Tech. Corp.*, 329 F.3d at 831.

[4][5] "In general, a **preamble** limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality to the claim.' " [FN3] *Catalina Mktg. Int'l Inc.*, 289 F.3d at 808 (citation omitted). "[T]hus, [it must be] determine[d] whether the **preamble** breathes life and meaning into the claim, and is incorporated by reference because of language appearing later in the claim, making it a limitation of the claim." *General Elec. Co. v. Nintendo Co., Ltd.*, 179 F.3d 1350, 1361 (Fed.Cir.1999).

FN3. "Conversely, a **preamble** is not limiting 'where a patentee defines a structurally complete invention in the claim body and uses the **preamble** only to state a purpose or intended use for the invention.' " *Catalina Mktg. Int'l Inc.*, 289 F.3d at 808 (citation omitted).

The words in the **preamble**, "A repeater management device" recite essential structure by requiring the inclusion of repeater management, bridging support and media access controller functions in a single device. These words in conjunction with the term "comprising" evince that the inventors relied on the **preamble** phrase to breathe life into the claim. "[T]he word 'comprising' is an open transition phrase," which means that the claim's "scope may cover [a] device[ ] that employ[s] additional, unrecited elements." *AFG Indus., Inc. v. Cardinal IG Co.*, 239 F.3d 1239, 1244 (Fed.Cir.2001). Since the **preamble** to claim 1 is "essential to understand limitations or terms in the claim body," it limits the scope of the claim. *Id.*

The **preamble** describes a repeater management device ("RMD") as a single device that controls more than one repeater and routes data packets between a receiving port and a destination port. The patent's "summary of the invention" states "the present invention discloses a system which combines the functions of repeater management,

ethernet MAC, and network bridging support into a single device." \*1244 ('603 patent at col. 2:31-33.) Intel argues that "device" should be interpreted to mean "a chip or a **circuit board**." (Level One Proposed Claim Construction ¶ 1.) However, no particular physical manifestation is articulated in the claim or the specification; therefore, the term "device" is not limited to these physical manifestations.

*B. Claim Element One: "Repeater management means for controlling and monitoring repeater functions related to the retransmission of the data packets and for providing status of and control over repeater functions via an external repeater management interface;"*

[6][7][8] The parties dispute whether "repeater management means" is written in means-plus-function form. Title 35, section 112, paragraph 6 of the United States Code provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6.

Such limitations are generally known as "means-plus-function" or "step-plus-function" limitations. Through use of means-plus-function limitations, patent applicants are allowed to claim an element of a combination functionally,

**\* The requested pages begin below \***

function. *Id.* "[And], even if a claim element does not, on its face, recite definite structure, it may still call to mind definite structure to one skilled in the art and therefore avoid falling under § 112, ¶ 6." *Rackman v. Microsoft Corp.*, 102 F.Supp.2d 113, 124 (E.D.N.Y.2000). Further the presumption is rebutted if the claim fails to recite any corresponding function. *Id.* at 119. Since claim 1 recites corresponding function, only the first **method** of rebutting the presumption is relevant.

\*1245 Although the "external repeater management interface" is structure that corresponds to the listed repeater management functions, this alone is "[in]sufficient structure ... for performing the

claimed function[s]." *Al- Site Corp.*, 174 F.3d at 1318. Therefore, the presumption is not rebutted.

Intel argues it is rebutted because "repeater management" is a known, structural element, the particulars of which were specified in IEEE Standard 802.3u, clause 30. [FN4] (Level One Opp'n to Altima's Opening Claim Construction ("Level One Opp'n") at 8.) However, Intel acknowledges that the IEEE considers the referenced standard to be "behavioral" in contrast to "structural." (*Id.* at 9.) Altima's expert witness Mr. Frazier explained that IEEE standards "do not define implementation, they describe required behavior and functions." (RT vol. II at 350.) Likewise, IEEE Standard 802.3 provides, "The managed objects within this standard are defined in terms of behavior, attributes, actions, notifications, and packages in accordance with

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Basic Control Capability must be performed in order to satisfy the relevant IEEE 802.3 Standard for repeater management. [FN5] ('603 patent at col. 1:45-48.)

FN5. "Incorporation by reference provides a method for integrating material from various documents into a host document--a patent or printed publication in an anticipation determination--by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein. To incorporate material by reference, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents.... Further, the standard of one reasonably skilled in the art should be used to determine whether the host document describes the material to be incorporated by reference with sufficient particularity." *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282-83 (Fed.Cir.2000) (citations omitted).

The second step in determining the means-plus-function limitation identifies the

structure corresponding to the recited function. *Rackman*, 102 F.Supp.2d at 125. "A structure in the specification will only be deemed a

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Frame transmission includes data encapsulation and Media Access management aspects:

- a) Transmit Data Encapsulation includes the assembly of the outgoing frame (from values provided by the MAC client) and frame check sequence generation.
- b) Transmit Media Access Management includes carrier deference, interframe spacing, collision detection and enforcement, collision backoff and retransmission, carrier extension, and frame bursting.

IEEE Std. 802.3, clause 4.2.3. The specification supports this interpretation by stating, "the MAC function has a transmit function ..." ('603 patent at col. 3:45) and "[t]he MAC provides preamble and cyclic redundancy check (CRC) generation and detection...." (*Id.* at col. 3:48-49.) "Signal framing" in the context of the MAC is defined by the IEEE 802.3 standard, clauses 3 and 4.

The MAC also controls access to the repeater data interface, which is the location at which data passes between a repeater and the RMD. Altima argues the \*1253 MAC manages access to the repeater data interface using "the media access management algorithms set forth in, e.g., the IEEE 802.3 standard." (Altima's Opening Claim Construction Br. at 69.) This construction is supported since the specification incorporates by reference the definition of an Ethernet MAC contained in the IEEE 802.3 specification. ('603 patent at col. 1:45-48.)

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*V. Claim Five: "The repeater management device of claim 1 wherein the media access controller further comprises means for generating preambles and error correcting codes, means for detecting error correcting codes, means for handling deferrals and collisions, means for controlling and handling backoff conditions, and means for retrying data transmission."*

[18] Claim 5 is dependent on claim 1. Claim 5 requires a MAC that generates and detects error correcting codes. One skilled in the art would perceive "error correction coding [as] 'an encoding of data and redundant check bits that enables decoding hardware to reconstruct the original data in the presence of a data-bit or check-bit error.'" (Witness Statement of Howard Frazier at 23 (quoting IEEE Dictionary 395 (7th ed.2000)).) Altima's expert Mr. Frazier explained:

An error correcting code adds additional information to data that is being transmitted. You transmit the data that you want to send and then you generally append some redundant bits, some additional bits, to that data which would enable hardware at the receiving or decoding end to recreate, reconstruct the original data, and correct it in the presence of noise or byte errors. So, if error had been introduced in the data during transmission, the error correcting code information can be used to reconstruct the data and restore it.

(RT vol. II at 375-76.) "[E]rror detection coding" is "an encoding of data and redundant check bits, such that in the presence of a data-bit or check-bit error decoding hardware can detect the error, but cannot reconstruct the original data." \*1254 (Witness Statement of Howard Frazier at 23 (quoting IEEE Dictionary 395 (7th ed.2000)).) Altima's expert Mr. Frazier explained in his witness statement, "Typical industry standard MACs do not generate or detect error *correcting* codes but they do generate error *detection* codes." (*Id.* (emphasis added).)

Intel argues that the patentees acted as their own lexicographers in Claim 5 and the phrase "generating ... error correcting codes" refers to CRC generation. (Level One's Reply at 39.) As such, the claim specifies a MAC that uses "a particular cyclic redundancy code designed for error detection and not error correction." (*Id.*) However, this construction is not supported by the prosecution history. Application claim 6 required the MAC to comprise "means for generating **preambles** and error correcting codes, means for detecting error correcting codes...." Application claim 13, which was expressly canceled, required the MAC to comprise "means for generating **preambles** and cyclic redundancy checks (CRCs) for the data packets...." These two claims used different terms to require different functions. The prosecution history reveals that the patentees did not mean CRC

generation when they used the phrase "generating ... error correcting codes."

Although one skilled in the art may view the reference to "correcting" instead of "detecting" as an obvious error, the claim cannot be rewritten by the Court to correct this error. *Cf. Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed.Cir.2002) ("It is not [the court's] function to rewrite claims to preserve their validity."). Therefore, claim 5 requires a MAC to generate and detect error correcting codes.

Claim 5 also requires a MAC to generate **preambles**, handle deferrals and collisions, control and handle backoff conditions, and retry data transmission. These additional details on Ethernet MAC operations are defined in IEEE Standard 802.3, clauses 3 and 4.

*VI. Claim Six: "The repeater management device of claim 1 wherein the repeater management means further comprises registers for storing the attributes relating to repeater functions."*

[19] Claim 6 is dependent on claim 1 and provides that the repeater management means includes at least two registers for storing the attributes relating to repeater functions. "Attributes" refers to repeater configuration or status values. (Altima's Opening Claim Construction Br. at 74; Level One Opp'n at 30.)

*VII. Claim Seven: "The repeater management device of claim 1 further comprising a media access control port for providing data packets received by the media access controller via the repeater data interface to memory."*

[20] Claim 7 is dependent on claim 1 and provides that the RMD includes a MAC port for moving data packets received through the repeater data interface

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specification "an inter-repeater bus 308 routes information to and from remote repeaters 310." ('603 patent at col. 4:45-46.) Figure 3 which corresponds to the quoted language illustrates "inter-repeater bus 308" as an "inter-repeater backplane." Figure 3 also illustrates that the inter-repeater backplane is outside or external to the RMD.

Intel contends an inter-repeater backplane refers to a high-performance connector, which is not a standard Ethernet cable. (Level One's Proposed Claim Construction ¶ 9.) Intel's expert Dr. Colin Mick explains in his witness statement, "In ordinary usage in the art, an 'inter-repeater backplane' requires a complex set of proprietary signals supported via a specialized connector and cabling system.... [A]n inter-repeater backplane cable carries more signals (data plane, control plane, and other) [than a standard Ethernet cable]." (Intel's Witness Statement of Dr. Mick at 5-6.) This interpretation is supported by the specification which explains that the inter-repeater backplane "consists of 5 signals." ('603 patent at col. 6:52.) At the hearing, Dr. Mick explained,

A backplane would be a collection of communications channels that are used to perform--make a high performance connection and join together **electronic components**. The notion of an inter-repeater backplane obviously extends from that. It provides the high performance connection that can be used to connect multiple repeaters together, and it actually goes beyond that. You would

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explained:

FN9. I/O is a general acronym used when data is being read (input) or written (output).

FN10. Altima cites to the IEEE Standard Dictionary of Electrical and Electronics Terms to define DMA. According to the IEEE dictionary direct memory access is:

(1) Access to data by which data is transferred directly between main memory and storage devices.

(2) Ability of I/O controller modules to independently access memory. An I/O controller with DMA capabilities can access commands, fetch data, and report status by accessing memory directly.

(3) A **method** for transferring data between an external device and memory without interrupting program flow or requiring CPU intervention. Note: The interface device takes control of the

memory and transfers that data.

(4) This refers to the ability of I/O controller modules to independently access memory. An I/O controller with DMA capabilities can access commands, fetch data, and report status by accessing memory directly.

Institute of Electronic and Electrical Engineers, *IEEE Standard Dictionary of Electrical and Electronics Terms* 297 (6th ed.1997).

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*Claim 1:*

***Preamble:***

A repeater management device is a single device for a communications network that controls repeaters and routes data packets between a receiving port and a destination port, and which comprises:

***First Element: Repeater Management Means***

A repeater management means with recited functions.

The first recited functions of the repeater management means are controlling and monitoring repeater functions related to the retransmission of data packets.

The structures corresponding to these functions are the repeater data interface, the Ethernet Management Information Base, RMON counters, a CPU interface, structures interconnecting these elements, and equivalents thereof.

The second recited functions of the repeater management means are providing status of and control over repeater functions via an external repeater management interface.

The structures corresponding to these functions are the external repeater management interface, internal registers, an access port, and equivalents thereof.

The external repeater management interface is the location at which information passes between the RMD and external repeaters.

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*Claim 3:*

The repeater management means of claim 1 controls the bridging support means of claim 1.

*Claim 4:*

The repeater management means of claim 1 includes at least two counters for traffic control.

*Claim 5:*

The MAC of claim 1 must generate and detect error correcting codes.

The MAC of claim 1 must include means for generating **preambles**, for handling deferrals and collisions, for controlling and handling backoff conditions, and for retrying data transmission. These details are defined in IEEE Std. 802.3, clauses 3 and 4.

*Claim 6:*

The repeater management means of claim 1 includes at least two registers for storing the attributes relating to repeater functions.

Attributes refers to repeater configuration or status values.

*Claim 7:*

The RMD of claim 1 includes a MAC port for moving data packets received through the repeater data interface to memory.

*Claim 8:*

Claim 8 contains an error because it does not refer to the claim upon which it